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Yamaha YSP-4000 Digital Sound Projector

Home Theater Loudspeakers » Speaker Systems

Written by Jim Swantko

Sunday, 01 June 2008

Introduction

It should come to no surprise that flat panel televisions are all the rage these days, and rightly so. They look great, can be hung on the wall for mega-wow factor and are the reason for marital bliss in countless homes nationwide. The fact that flat screens are as much a fashion item as they are a source of entertainment has done wonders to ease the age-old conflict between a man's desire for a huge video screen for watching football and a woman's desire to have an orderly living room. It is my belief that this conflict was a primary motivation for manufacturers to create televisions thin enough to hang on the wall in the first place. I can hear the meetings now: "Make it look nice, so wives will like it and will let their husbands go crazy and spring for a huge, expensive TV – it's a foolproof plan." Guess what? The plan worked.

The first attempts had surround speakers so small that they were unnoticeable. This seemed like a great idea, except for one problem: the speaker wires. Hmm, how about wireless speakers? That too has been tried, but you still need to power them, which means either an ugly AC adaptor or batteries that die and need constant replacement.

The latest solution is a deceptively simple idea: manipulate the audio signals in such a way that they bounce the surround information from the front of the room, off the side walls, then into your ears. Voila, instant surround. In theory, the concept works just like banking a pool ball off the rail and into the corner pocket. Anyone who has ever played pool can tell you this looks much easier than it is. Bank shots require a nearly perfect angle to make the shot. If you failed geometry in school, stick to pinball.

Yamaha has adopted this strategy with the YSP-4000, which is their top of the line digital sound projector, with a retail price of $1,799. It uses an array of fourty, one-and-five-eighths-inch "beam" drivers, which steer the surround information to the correct angle so it bounces off the wall and to your ear. It also has two, four-and-three-eighths-inch woofers to handle the low frequencies. Each beam driver receives two watts of power and the woofers receive 20 watts apiece.

Bouncing sounds off walls may seem elementary, but when you consider the fact that most living rooms are filled with a variety of surfaces at odd angles and of differing materials, it quickly becomes an overwhelming feat to do so with control. The Yamaha YSP-4000 uses a microphone to monitor test tones generated from the beam drivers. The units' processors adjust the source signals until the microphone tells it that the surround information sounds correct. Thankfully, this is a fully automated process that takes only a few minutes to complete.

The unit is fairly large, measuring a little over 40 inches wide, nearly six inches high and approximately five inches deep, weighing a solid 34 pounds. It can be ordered in either black or silver to blend in easily with nearly all televisions (mine was black). It can be wall-mounted or simply placed on a rack. The front has a small center display that provides lots of useful information, such as volume level, surround decoding algorithm, input and more. There is also a large alpha-numeric display that is used for the all the remaining information that the user may ever need. Buttons for power, volume and input are also located on the front of the unit, should you misplace the remote. The front panel is rounded out by an auxiliary input for audio devices like your iPod and the input for the included set-up microphone.

The back of the unit has plenty of inputs and video outputs for the average user. For video sources, it has two HDMI inputs, two component video inputs and a single composite video input. For audio, it has two sets of analog inputs and accepts digital sources via its two coax and two optical Toslink connectors. There is also an XM mini-tuner jack, as well as an iPod dock port. The XM tuner and iPod dock are sold separately, but adding them will make the integration of these devices much simpler.

Set-up

The YSP-4000 arrived at my house very well packaged and included a host of cables (video, digital optical and coax, analog audio and an FM antenna) and a very thorough instruction manual, which I was pleasantly surprised to see. I am one of those people who still uses a stand rather than hanging the television on the wall. I am fortunate that my stand is deep enough to hold my television and provide enough space for the YSP-4000 to be placed in front of it. It happens to blend in perfectly with my Sony 60-inch rear-projection set and is all but invisible until you look for it.

With the unit in place, I began connecting it to my other devices. I used both of the HDMI inputs for my DirecTV box and my VuDu media server. I also used a pair of analog inputs from my Esoteric DV-50 universal player. I connected the optional iPod docking station and XM tuner as well. While making the connections, I noticed that the rear panel is nicely labeled. Some of the connectors are oriented down towards the floor, but the labeling makes this a non-issue. The connectors are deeply recessed to allow for cables to be run between the television and the wall, should you mount it there.

Once all the connections were made, I connected the auto set-up microphone to the front of the unit. This is the first time that I have seen a microphone stand included with a product, and it's a great idea. Sections of the cardboard packaging have been perforated so that you can pop out two pieces that interlock to form the stand. The holder stands a few feet high and is remarkably sturdy. It's an idea so simple that it begs the question of why everyone doesn't do this. I guess Yamaha just has more creative engineers than everyone else.

With the mic installed, I pressed start and left the room as instructed. In about two minutes, the auto set-up was complete and I was ready to start listening.

Music and Movies

The YSP-4000 is designed to be the heart of the entertainment system and is extremely user-friendly and flexible. The number of devices that you can play with it was a little overwhelming, considering that 99 percent of the time I listen to my system, it's only with CD/SACDs.

I decided I would start with the Red Hot Chili Peppers' CD Mother's Milk (Capitol). I cued up one of my favorite songs, "Knock Me Down," and set the YSP-4000 to stereo mode. Immediately, I noticed Flea's bass licks had plenty of snap and speed and Anthony Kiedis' voice was front and center. The kick drums didn't have enough output to rattle any windows but, considering the fact that the woofers were less than five inches in diameter, they really did a nice job keeping up with the music. I decided that I wanted a little more oomph in the bass department, so I connected the subwoofer output of the YSP to my Boston Acoustic 12-inch sub. As expected, it was quite a bit better for my tastes. For the average consumer who is considering a product like this, the YSP's internal woofers will be more than adequate.

My MP3 listening is typically relegated to gym use only, but since Yamaha was kind enough to include their iPod docking station, I decided to give it a try and see how it sounded with something other than earphones. The docking station is a must for anyone who has a large library of music on the iPod. It allows you to control your iPod with the YSP's remote and I quickly realized how convenient music servers really are. I sampled lots of the music that I keep on my iPod and was quite impressed with the sound.

Guns N' Roses' controversial song "One in a Million," from the G N' R Lies album (Geffen), sounded great. Slash's acoustic guitar sounded clear and nicely detailed. Axl Rose's voice came through with all the gravelly texture that he is known for. The problem, however, was that the soundstage was flat as a pancake. Luckily, I noticed a feature labeled "enhancer" and read that it was designed to help bring the soundstage back to MP3 music. It has three settings: high, low and off. When it was activated, the difference was staggering. On the high setting (which I preferred), the soundstage easily doubled in width and probably tripled in depth. As with many good things, however, there is a trade-off and in this case it was a sacrifice of a tiny bit of clarity and detail when using the enhancer. To my ears, the benefits vastly outweighed the sacrifice and I left the enhancer on for the remainder of the listening.

The next song after GNR is from Hank Williams, Jr. "A Country Boy Can Survive" is from the 1981 album The Pressure Is On (Curb records). The pedal steel guitar had plenty of twang and the kick drum was tight and quick. Hank's voice, like Axl's, had plenty of texture and gruffness, which came through so clearly you could almost see the tobacco in his cheek. This song made me proud to be a hillbilly. The YSP kept my toe tapping all the way through the tune.

I decided to continue living in the 1980s and played some old-school hair metal. Don Dokken and the rest of the boys of Dokken kicked ass through the Yamaha. George Lynch's guitar thrashing in "It's Not Love" off Under Lock and Key (Elektra) took me back to my high-school weekends searching for someone to buy me some beer and for a hottie to get drunk (among other things) with. Sometimes I really miss the good old days, and the Yamaha was able to deliver me a suitable flashback to that pleasant past.
This system was a blast with music and would be perfectly happy providing background music or serving as a jukebox for your next party, when everyone wants to hear their favorite Jimmy Buffett song between shots of tequila.

With the easy stuff complete, it was time to get serious and see how the YSP did with its primary mission as a surround system. According to the user's manual, my room is fairly optimal for reflecting sounds, since it's basically a rectangle with very little clutter to absorb or diffract sounds. My seating location is three-quarters of the way back from the TV, with very little between it and the rear wall. I have to be honest and say that even with an optimal room, I was skeptical about this whole thing working. I did not expect it to be able to convincingly offer surround effects. I was wrong, because it did.

The film The Prestige (Warner Home Video) is a tale of two magicians constantly trying to upstage the other. Many of the scenes take place in bars, where the magicians perform their magic in front of drunken crowds of disbelievers. The YSP was able to convincingly immerse me in that bar, while using the 5 Beam setting. Beer bottles were being dropped on the floor and breaking over my right shoulder. To the left, there were yells calling the magician a cheat and a fake. I was impressed. The three front channels were also impressive, as the Yamaha threw a wide soundstage, with voices and effects nicely placed. The biggest complaint I had was that the surround effects didn't have the dynamics and punch that dedicated speakers do, especially for action scenes.

In Talladega Nights: The Ballad of Ricky Bobby (Sony Pictures Home Entertainment), the racecar engines behind Ricky (Will Ferrell) didn't have the bass growl that I had heard with my dedicated surround speakers, which is not a surprise, considering that it was generated from small drivers and reflected off a wall. This is a small quibble, considering that this product is not designed as a reference surround system. Rest assured, however, that Ricky Bobby's baby Jesus rendition of grace, along with the rest of the film, sounded great.

Again, I was impressed. I decided to try some of the other beam-steering effects that the YSP offers and found some of them to be not only cool, but also really useful. One setting called My Beam creates a focused beam of audio, which can be directed up to 45 degrees off-center of the YSP-4000. I'm sure we all know what it's like to try to watch TV in a noisy environment, where someone else is running the vacuum cleaner in the other room or talking loudly on the phone. Usually, you just turn up the volume until you can hear it or the person on the phone mouths a few expletives your way to turn it down. At this point, I typically leave the room for the garage. However, the Yamaha created a small cocoon of sound that I could control as I wished. I used this feature all the time and will really miss it.

The Downside

If you are looking for a reference surround system, this product isn't for you. The surround effects aren't as dynamic as you would get with a dedicated 7.1 speaker system and a powerful surround receiver. You just can't cheat physics, but Yamaha comes close to doing so in a way that is truly impressive.

The YSP-4000 is also fairly heavy, so if you plan to hang it on the wall, do yourself a favor and make sure you find some solid studs for screwing in the mounting bracket. Otherwise, you will be calling in a sheetrock contractor to rebuild your wall.

Conclusion

I love this thing. It's so simple that even the most non-technical of people can figure out how to use it. It's also just so damn convenient that you will find yourself listening to more music than you ever imagined, which is a compliment traditionally reserved for the most lofty audiophile products, with a price tag to match. Yamaha should be proud of how well the YSP reproduces music from such a slim and relevant product.

The Yamaha YSP-4000's uncluttered, elegant style will go with any décor. It offers real surround options that actually work without having to snake speaker wires through walls or under carpeting. So if you are looking for a huge upgrade over your standard TV speakers with surround capabilities and the ability to listen to FM, XM, MP3s and switch multiple video sources, you need to take a long hard listen to the Yamaha YSP-4000. It's one hell of a performer.

Manufacturer	Yamaha
Model	YSP-4000 Digital Sound Projector
Reviewer	Jim Swantko

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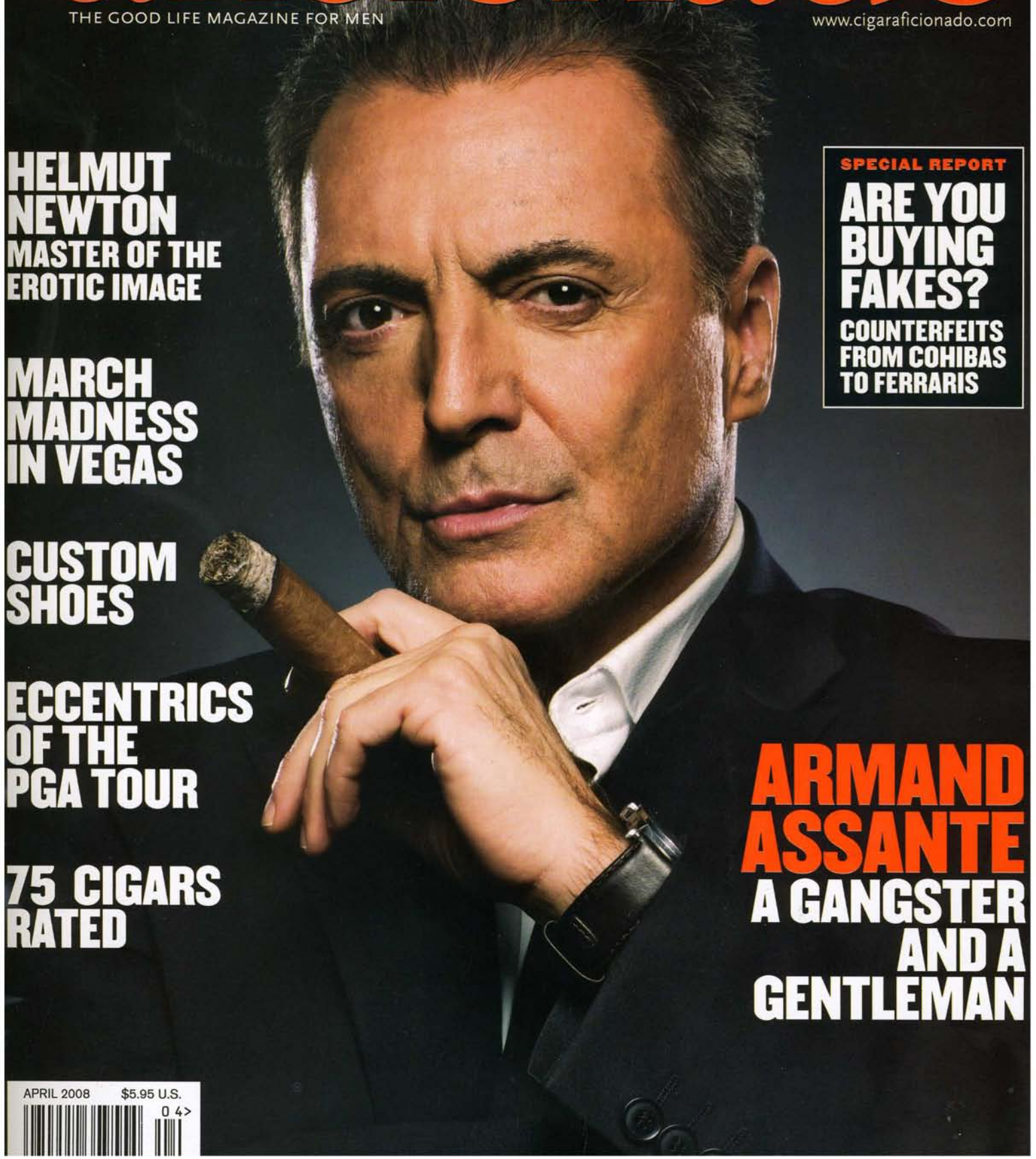

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BY STEVE MORGENSTERN
ILLUSTRATION BY ED FOTHERINGHAM

Yamaha YSP-4000

A sound bar is a single unit that incorporates speakers, amplification and sophisticated processing systems to fool your ear into thinking rear speakers are present. These products usually rely on a science called psychoacoustics, a hit-and-miss affair. Used for years to mimic surround sound in headphones and speaker systems, the effect is pretty convincing for some people, doesn't work at all for others, and generally strikes me as better than nothing, but not by much. This hefty Yamaha sound bar, though, far exceeded my expectations by relying more on traditional acoustics than psychoacoustics. The 40-inch-wide system boasts an array of 40 individually controlled microdrivers that beam surround sound off the side and back walls of your room, like a bank shot in billiards, to reach your ears from the proper angle. The included automatic calibration system is crucial to making this work, and fortunately it's a simple process—took just three minutes and

worked very well. Early on in the Blu-ray version of *Ratatouille* a drenching rain falls outside a French country house, and watching it at home the Yamaha placed me smack-dab in the middle of the downpour. Big, slam-bang action movie soundtracks didn't have the explosive oomph of a full-fledged 5.1 setup, even when the sound bar was paired with the optional YST-FSW150 subwoofer ($280), but the audio experience was still far more dramatic than any puny TV speakers, and the dialogue was pleasingly crisp and clear throughout.

The YSP-4000 includes a built-in FM tuner (but no AM) and supports the XM mini-tuner dock. I tried the optional iPod dock ($49.95) and found it worked fine, though the on-screen menu display lacked visual polish. It has two HDMI input jacks and one output, and the ability to upgrade any video input signal to 1080i high-def resolution is particularly welcome. *($1,800, www.yamaha.com)*

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7 Soundbars; Simple to Luxe

April 2008

Yamaha YSP-4000

Yamaha was one of the first companies to see the possibilities of soundbars (or, as Yamaha likes to call them, "digital sound projectors"). I reviewed two of their earlier-generation efforts (the YSP-1 in May 2005 and the YSP-800 in Feb/March 2006) and was thoroughly impressed. In particular, Yamaha used aggressive digital signal processing and a vast array of drivers to tackle the problem of creating spatial immersion from a line source, and the results were exceptional.

The YSP-4000 is Yamaha's newest entry in the soundbar category. It's a full-featured system containing decoders, amplifiers, and speakers. It also adds automatic room tuning, as well as full video hookups and an onscreen menu. When I say full-featured, I'm not kidding — this system has a full complement of HDMI jacks, can control an iPod, has an FM tuner onboard, and is even XM Radio-ready. (Hey, the owner's manual is 116 pages long.) In many ways, it's the most sophisticated soundbar in this roundup.

Features aside, the YSP-4000 is also a minor sonic miracle. It houses 40 full-range 1.5-inch speakers and two 4.25-inch woofers driven by 40 amplifier channels with maximum output power of 2 watts (into 4 ohms) and two channels rated at 20 watts (into 4 ohms). The speakers are used in conjunction with upstream signal processing to create and steer "beams" of sound that mimic a surround-sound field. Different modes, known as 5 Beam, 3 Beam, 3 Beam + Stereo, My Surround, and My Beam, let you choose and customize soundfields that sound best to you in your room. The system also contains Dolby Digital and DTS decoders, as well as Yamaha's Cinema DSP ambience programs. This loaded feature set is match by the YSP-4000's loaded $1,800 price tag — the heftiest among all the bars tested here.

Also available in black

Price $1,800 / yamaha.com/yec / 800-492-6242
•(2) 4.4-in woofers; (40) 1.6-in beam drivers •Finish: silver grille, black chassis •40.25 x 7.75 x 5.75 in; 34.6 lb

Setup

The YSP-4000 is a beefy bar with a prominent, silver metal grille that will either complement your silver flat-panel display or overwhelm it. Either way, it will add some bling to your room. Its front panel has an auxiliary input and a jack for the IntelliBeam microphone. There are also input select and volume buttons and an LCD readout. The back panel is as thick with jacks as some stereo receivers. You'll find two HDMI inputs and one output, two component-video and three composite-video inputs, component- and composite-video outputs, a subwoofer output, two analog stereo inputs, four digital-audio inputs, an XM Radio input, IR input and output, an RS-232C port, an antenna jack, and a system connector used to hook up an optional Yamaha subwoofer. There's also a port to mate Yamaha's YDS-10 iPod dock ($100).

I placed the soundbar under my TV and, taking the path of least resistance, connected it to my DVD player and display via HDMI cables. I connected my own subwoofer to the Yamaha's output. Next step was the IntelliBeam setup, which meant connecting the supplied microphone, placing it at my listening position, and then waiting while the system's test tones probed the room's acoustics. In about three minutes, the system was optimized for my space.

For fun, I also connected a YDS-10 iPod dock using the cable supplied with the dock. I was able to use the remote to control the iPod, and the on-screen display (OSD) made it easy to browse the player's contents. While you can view video and photos when using a simple remote mode, you can't see video using the more advanced OSD mode.

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Music Performance
Features and high-powered virtual surround are cool, but they're useless unless the speakers sound good. Fortunately, I was immediately impressed with the YSP-4000's stereo sound quality. Kashmir's vocals were properly warm and detailed, and the ultra-cool snare sound was appropriately dark and moody — though crash cymbals were a touch bright. The soundbar played extremely loudly, but it also degenerated into seriously shrill distortion. (Even though this extra gain might be useful for sources with very low output levels, the system lets you set a maximum volume, and this small chore is worth doing to muzzle any potentially loud and distorted levels.) My subwoofer handled the bass line nicely and meshed well with the bar, but when I turned down the sub's level, the Yamaha produced some decent bass on its own.

Turning to Blue Man Group, I punched in the surround modes. The first time you hear these, you'll smile. Sounds appear to originate from places where there are no speakers. Both the 5 Beam and 3 Beam + Stereo modes successfully placed images far on each end of the soundbar. The whooshing sound of the whipped boat antenna on "Sing Along" quickly swept far from side to side. Perhaps more important, the processing didn't significantly affect sound quality: Vocals and instruments remained tonally correct.

Movie Performance
I punched in the 5 Beam mode and spun *Superman Returns*. The sequences leading up to the "death" of Superman are dense with effects, both obvious and subtle. The YSP-4000 maintained dialogue intelligibility and timbral quality, while successfully expanding the soundfield far beyond the ends of the bar, placing images almost to either side of my listening position. (Your room acoustics might give a different result.) This yielded a broad and realistic sonic space that was plenty big enough to enjoy movies with surround soundtracks. Without my subwoofer, the LFE was a bit thin but serviceable; adding the sub delivered all the low end I needed, and the overall result was excellent.

Bottom Line
This is an impressive soundbar and — no pun intended — it raises the bar for any competitor. The YSP-4000 has every feature I can think of, and handles every detail of audio playback. Most important, it takes its "sound projector" name seriously and performs near-miracles in its ability to project a soundfield that reaches far beyond its physical cabinet. The soundfield isn't as immersive as with discrete speakers, but it's darn impressive. It's not an inexpensive solution — you can certainly buy a decent A/V receiver and surround speaker package for the cost of a YSP-4000. Still, if you've been considering a soundbar because of the convenience or cosmetic factors, but aren't willing to give up the perks of true surround playback, this system might well overcome your objections.